Wilmington District

Wilmington Harbor General Reevaluation Report

October 24, 2006

Wilmington District

General Reevaluation Report (GRR)

Wilmington Harbor GRR Components

- Fish passage at the Cape Fear River Locks and Dams
- Protection of Primary Nursery Area
- Relocation of a ship turning basin in the NE Cape Fear River

700 Acre Habitat Protection
Relocated Turning Basin
New Hanover County
Hilton RR Bridge
28 MI
Cape Fear Memorial Bridge
30 Acre Mitigation Site
State Port
Blasting
Atlantic Ocean
Brunswick County
MOTSU (Sunny Point)
Carolina Beach
6.2 Mile Passing Lane 42’ x 600’
Fort Fisher
Mouth of Cape Fear River
N
VA.
N.C.
Raleigh
N.C.
S.C.
Wilmington
Cape Fear River Site
N
WILMINGTON HARBOR GRR

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Rock Blasting

- NMFS Biological Opinion (BO) under the Endangered Species Act required:
  - Construct fish passage at Lock and Dam #1 for endangered shortnose sturgeon
  - Study feasibility of fish passage at other two locks and dams
- Without these conditions, blasting precluded
- 78 blasts to date, additional blasting may be required

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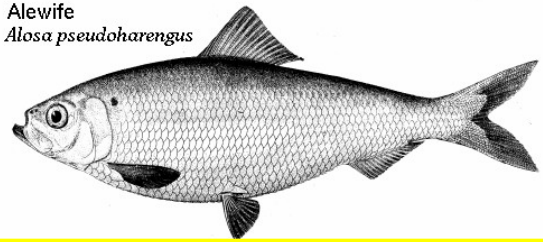
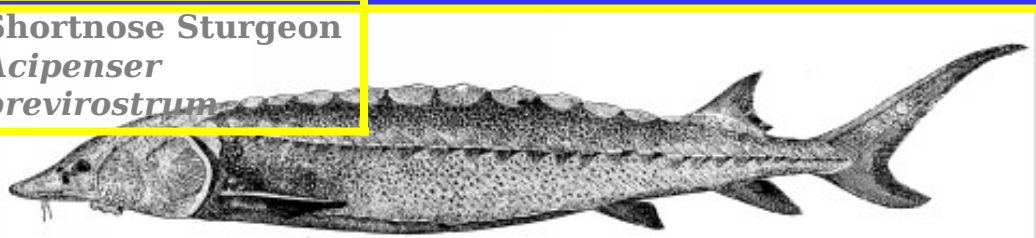
North Carolina Anadromous Fish

Alewife
Alosa pseudoharengus

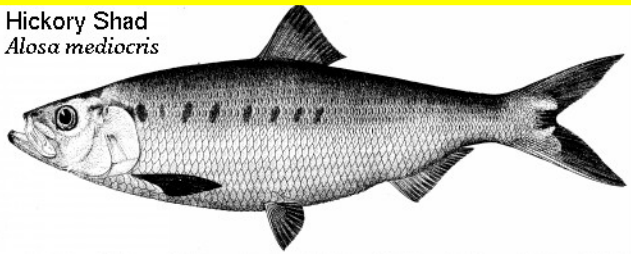


Atlantic Sturgeon
Acipenser oxyrhynchus

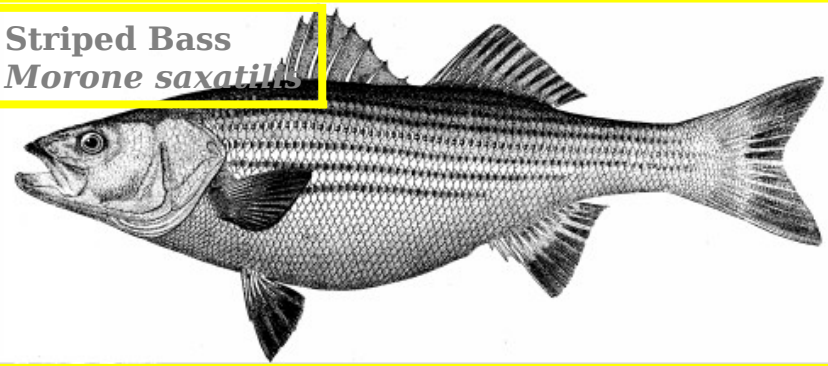
Shortnose Sturgeon
Acipenser brevirostrum



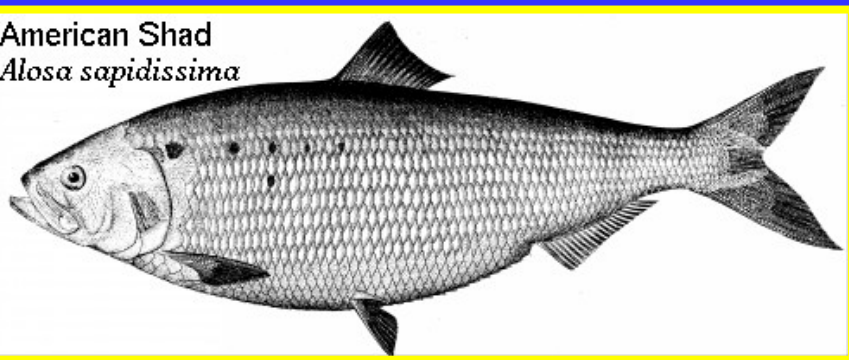
Hickory Shad
Alosa mediocris



Striped Bass
Morone saxatilis



American Shad
Alosa sapidissima



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Lock and Dam # 1 Fish Bypass

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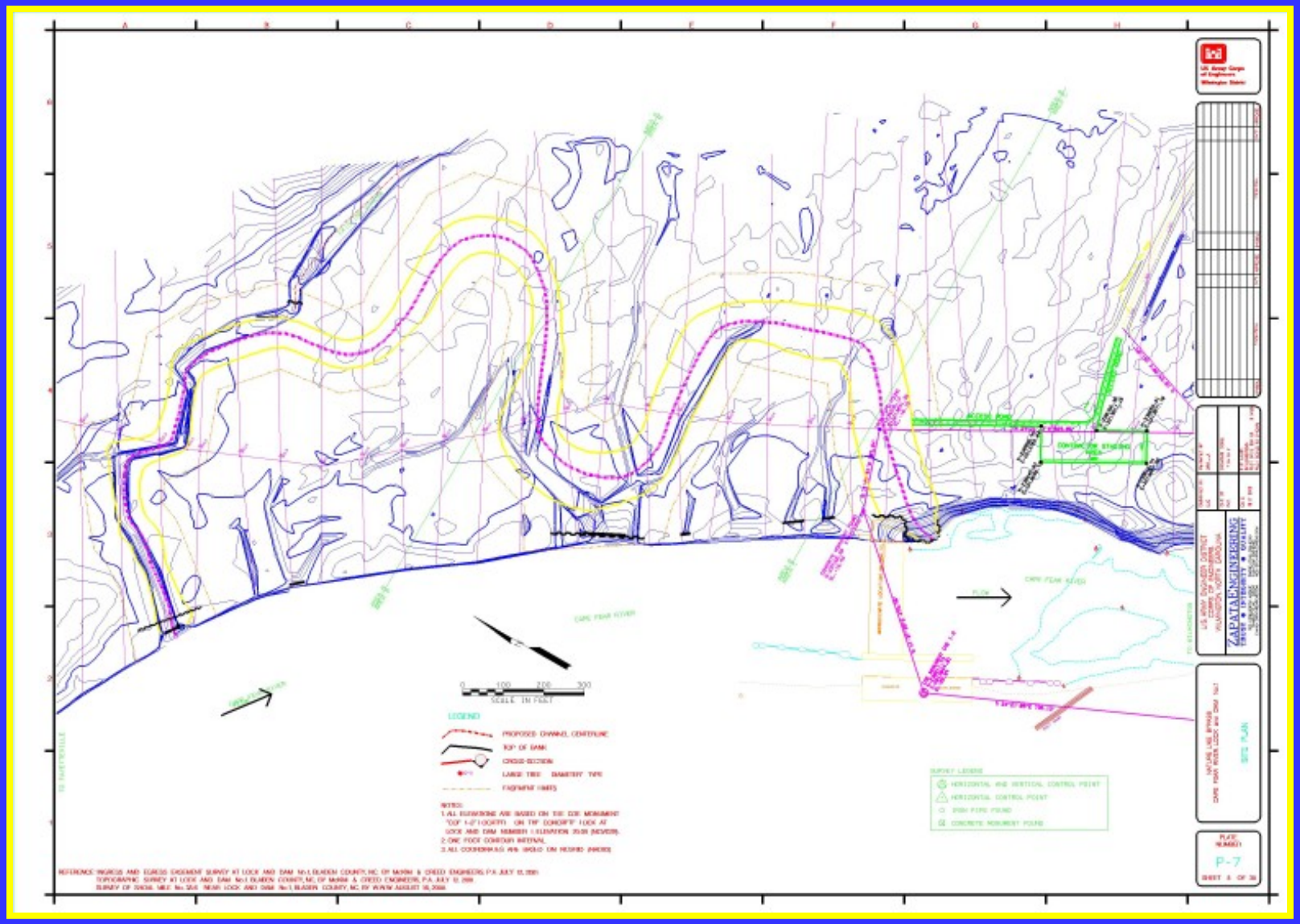
Bypass Design


LEGEND
PROPOSED CHANNEL CENTERLINE
TOP OF BANK
CROSS-SECTION
LARGE TREE DIAMETER TYPE
EASEMENT LIMITS
NOTES:
1. ALL ELEVATIONS ARE BASED ON THE USE MONUMENT "CUF 1-2" (LOCATED ON THE DOWNSTREAM LOCK AT LOCK AND DAM NUMBER 1 (ELEVATION 35.01 (NEVD88).
2. ONE FOOT CONTOUR INTERVAL.
3. ALL COORDINATES ARE BASED ON NC83(2011) (METERS)
SURVEY LEGEND
HORIZONTAL AND VERTICAL CONTROL POINT
HORIZONTAL CONTROL POINT
IRON PIPE FOUND
CONCRETE MONUMENT FOUND
SITE PLAN
P-7

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Better Fish Passage Alternatives?

- No commercial traffic
- Operations costs about $500-$600 thousand/year
- Locks and Dams have finite life
- Better fish passage solution considering:
  - Water supply
  - Recreation
  - Commercial and recreation fishing

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Lock and Dam # 1

- **Fish passage at Lock and Dam # 1:**
  - **Deauthorization not required**
    - **Continue locking**
    - **Nature-like fish way**
    - **Diversion rock ramp**
    - **Rock ramp the entire downstream face of the dam**
  - **Deauthorization required**
    - **Rock ramp or step pool in lock chamber**
    - **Alter the dam**
    - **Lower the dam**
    - **Remove the dam**

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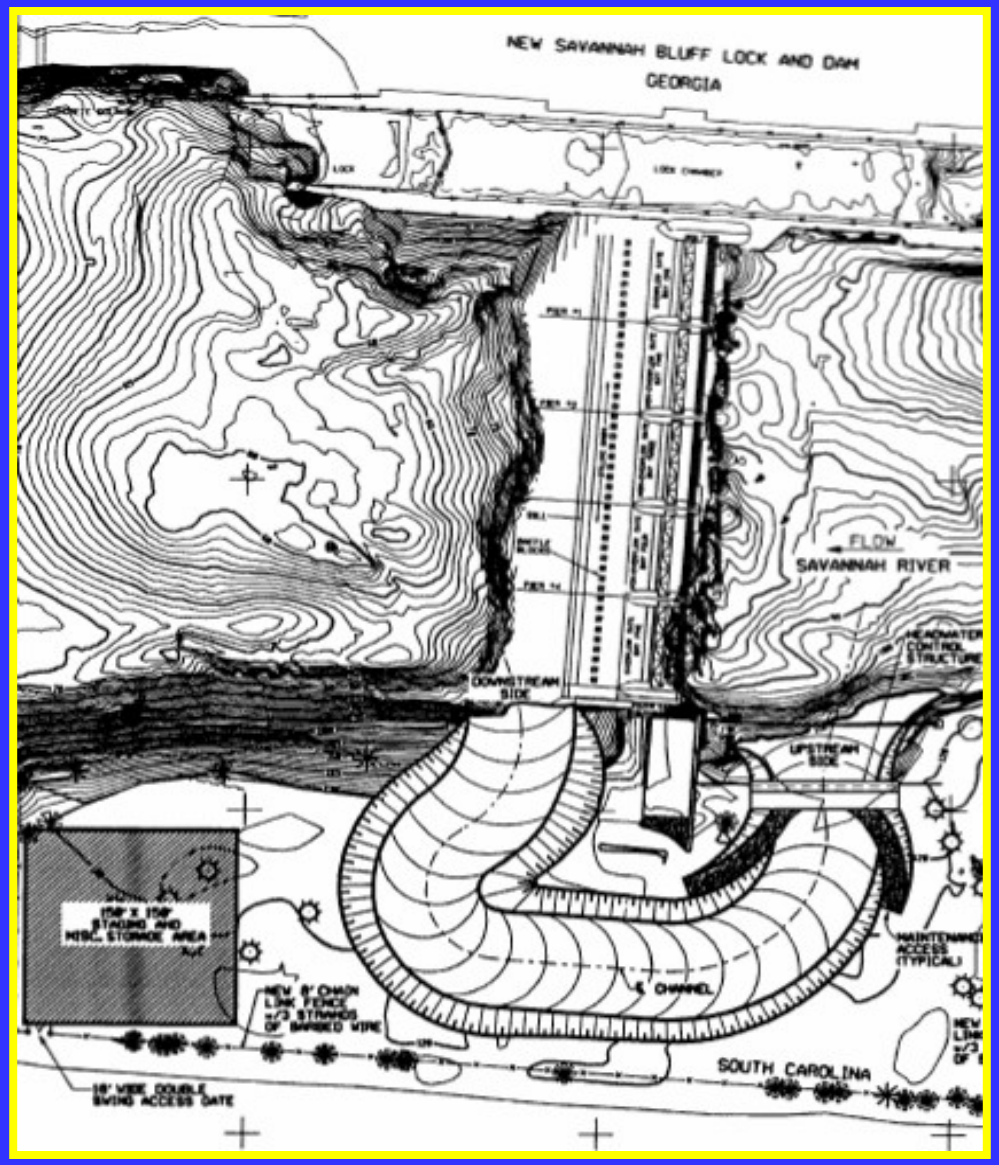
Diversion Rock Ramp



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Rock Arch Rapids
Red River, Fargo, ND

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Lock and Dam # 1

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Lock and Dam # 1

- **What about Water Supply?**
  - **The GRR will not contain any recommendations that compromise existing or future water supply needs!**
  - **Status quo of structures could change**
  - **Required to construct fish passage at Lock and Dam # 1, but only study Locks and Dams # 2 & # 3**
  - **Memorandum of Understanding**

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General Reevaluation Report

- **Locks and Dams Technical Issues:**
  - Can not compromise water supply
  - Detailed coordination will all parties
    - Local governments, water users, environmental groups, state and federal agencies
    - Quarterly interagency/Corps meetings
  - Alternative analysis for fish passage
  - Sediment and chemical data behind the dams
  - Stability of the locks and dams
  - Salt water intrusion
  - Potential for commercial use of the locks
  - Recreation
  - Wetland mapping
  - Modeling of water level changes it dams altered of removed
  - Future ownership of the locks and dams and recreation areas
  - Spawning areas for anadromous fish

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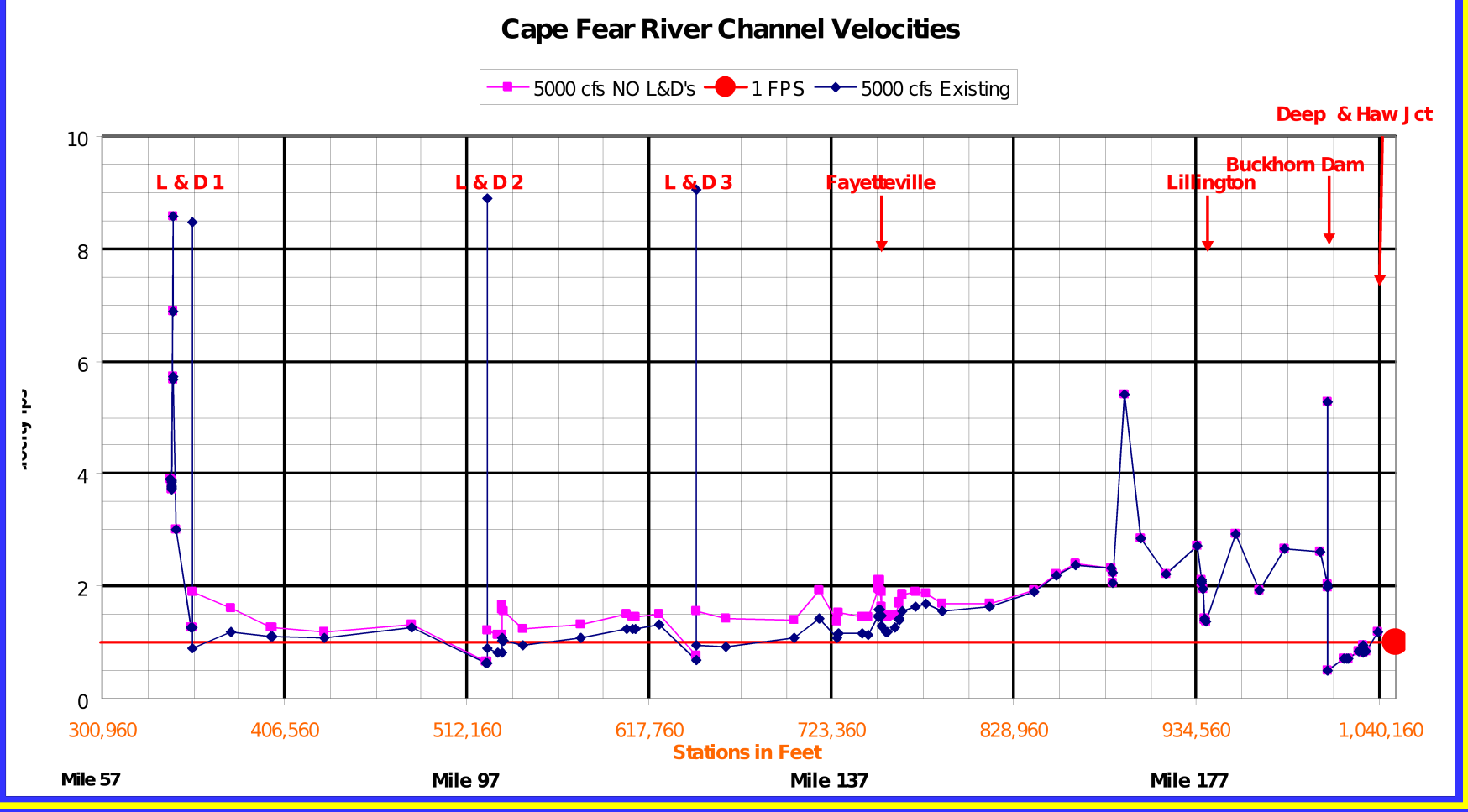

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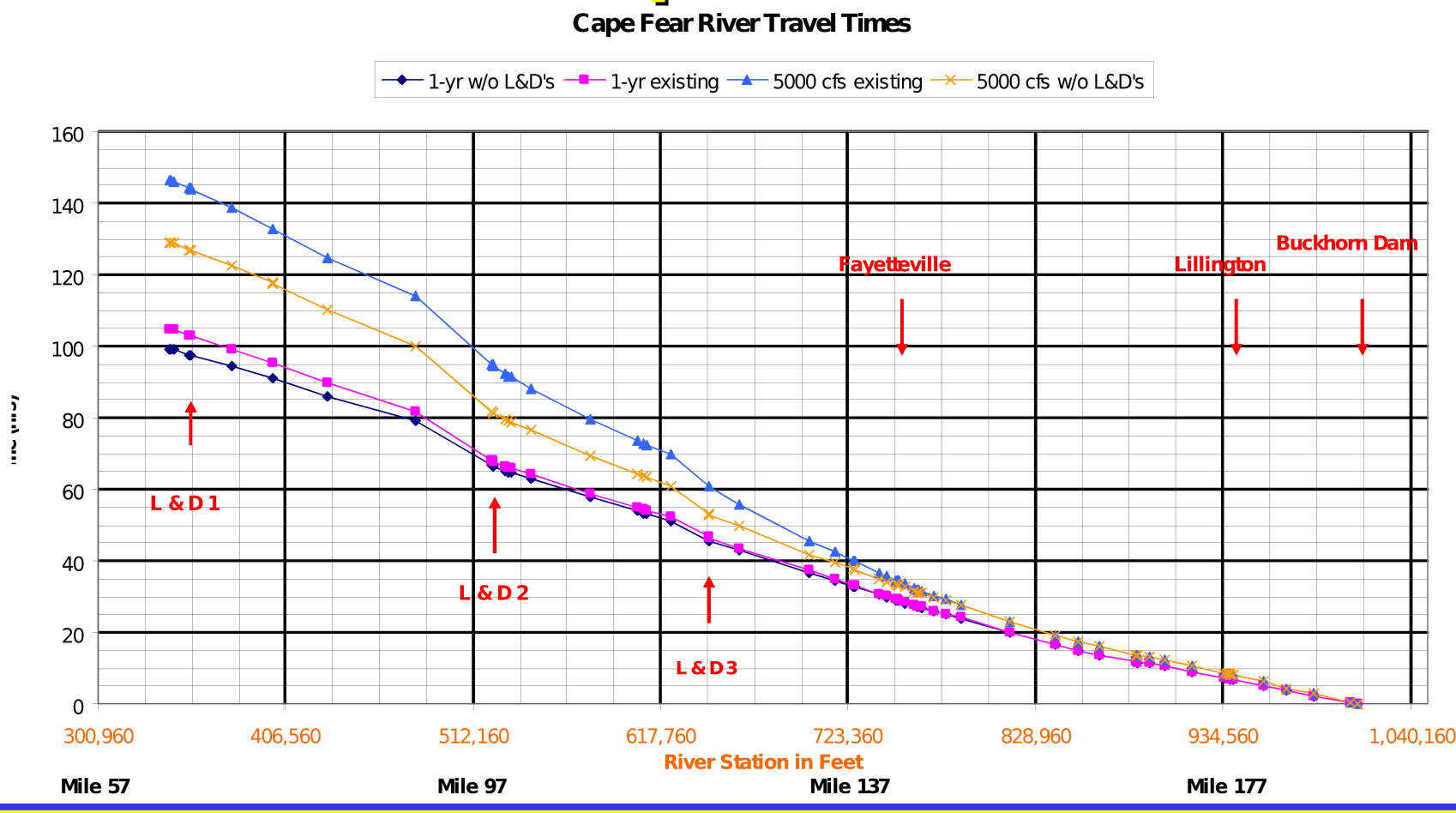
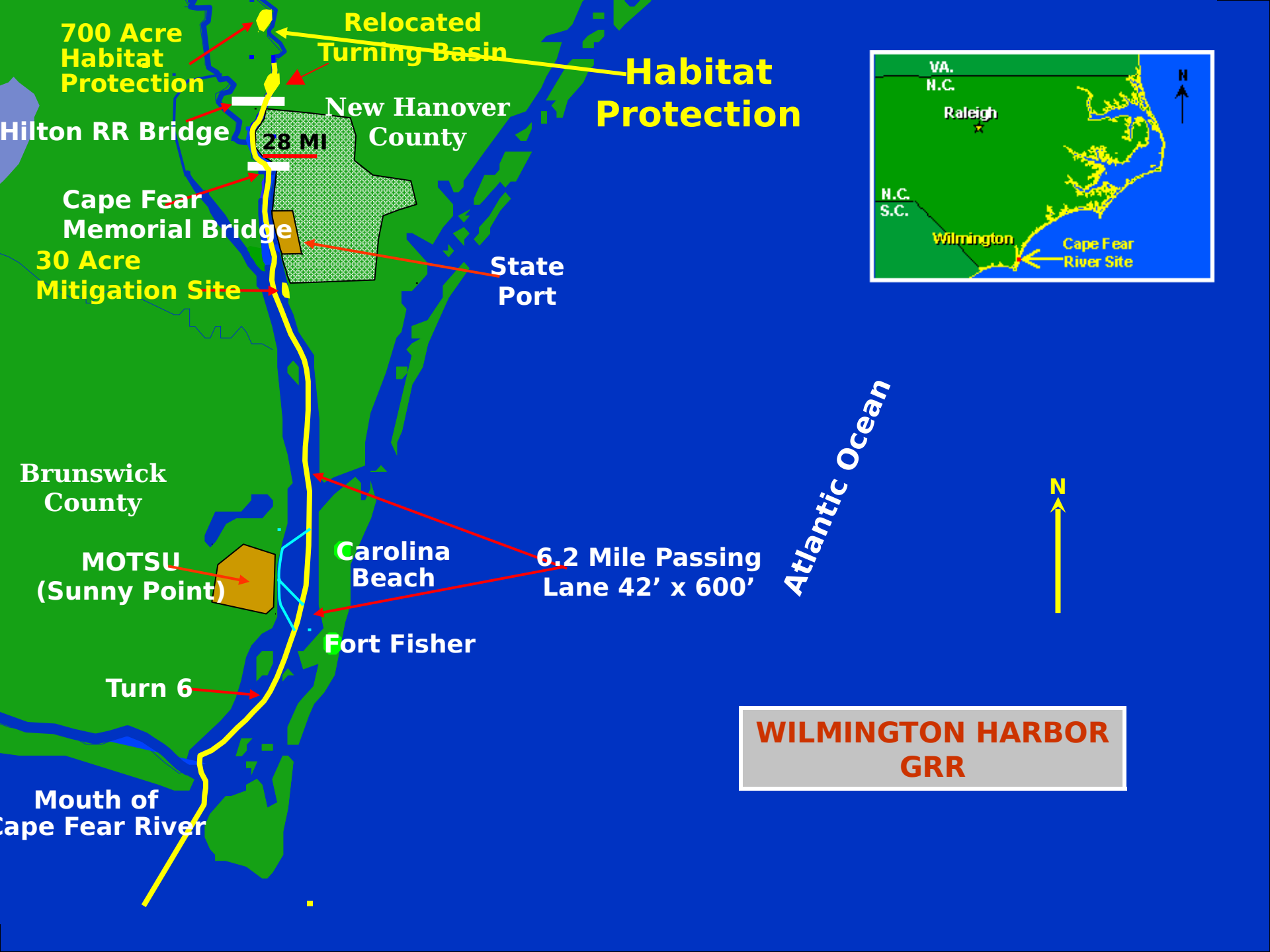
General Reevaluation Report

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Protection of Primary Nursery Areas

- 850 acres of swamp / upland with 29 acres Primary Nursery Areas
- Managed for public benefit
- Protection from siltation and pollution

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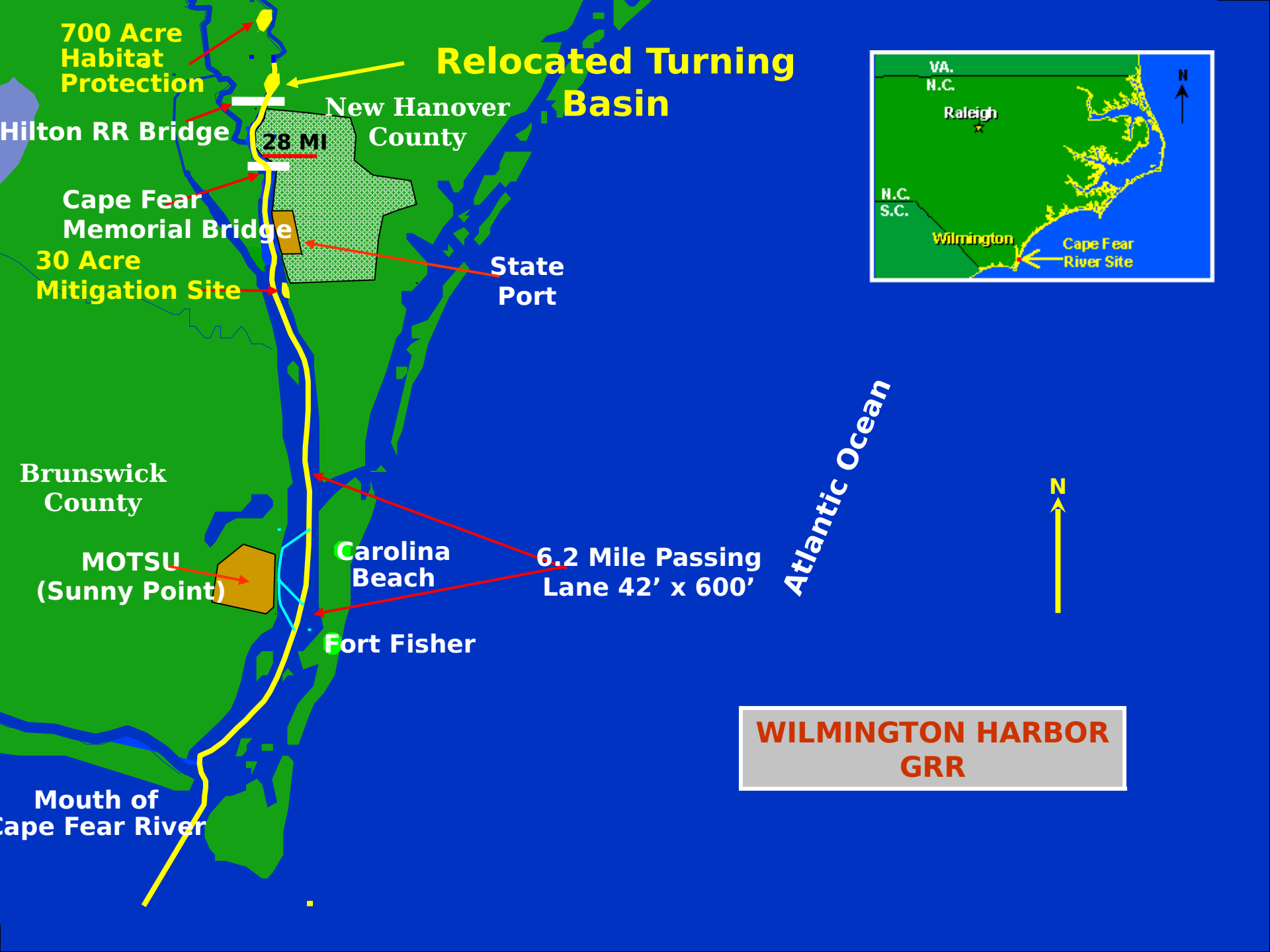
- **POD Technical Issues:**
  - **POD land coordination with State of NC and other agencies**
  - **Coordination with landowners**
  - **Future ownership/management**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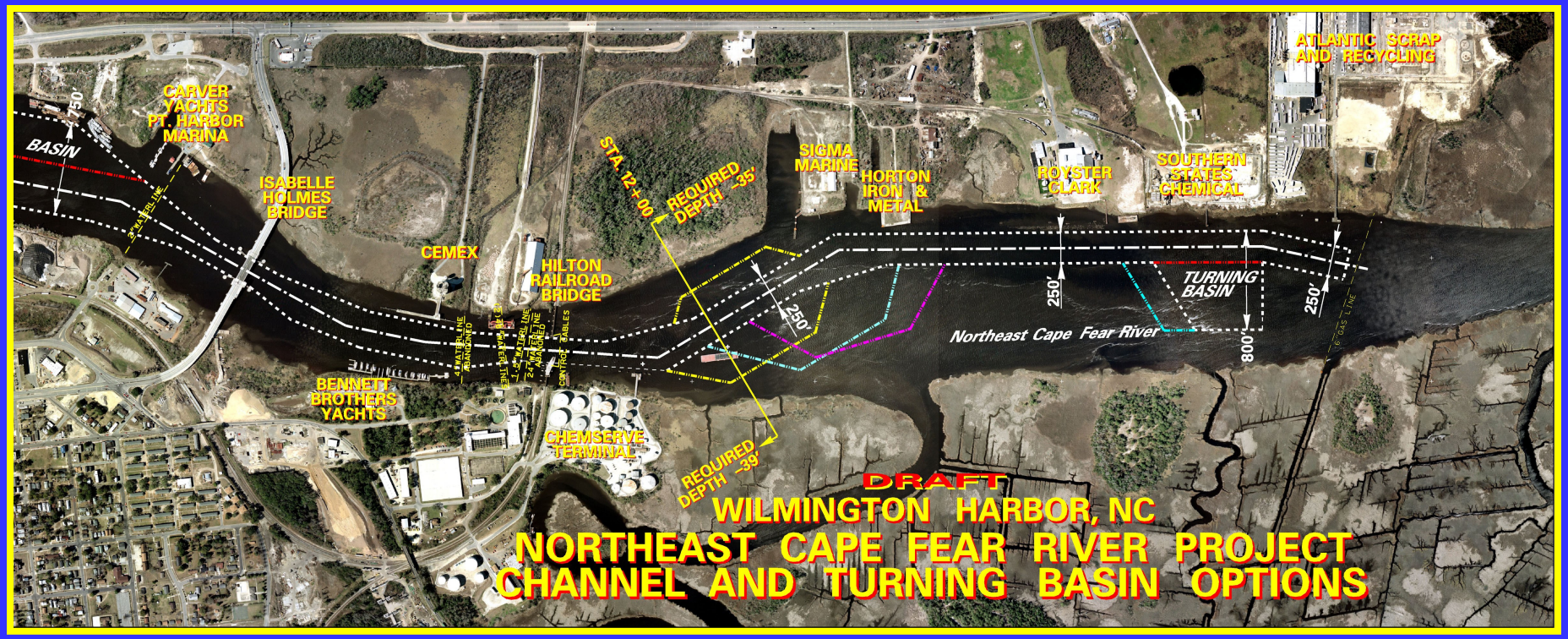
Potential Relocated Turning Basin



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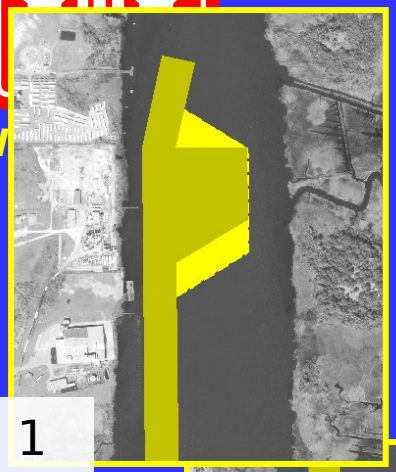
Relocated Turning Basin

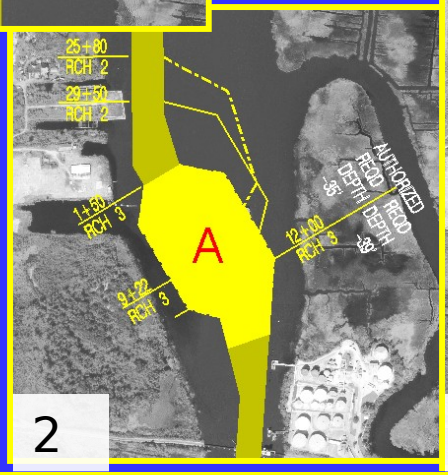
- Tight squeeze during daylight going bow first
- At night, backing stern first even more difficult

Turning Basin Alternatives - Draft Summary of Quantities



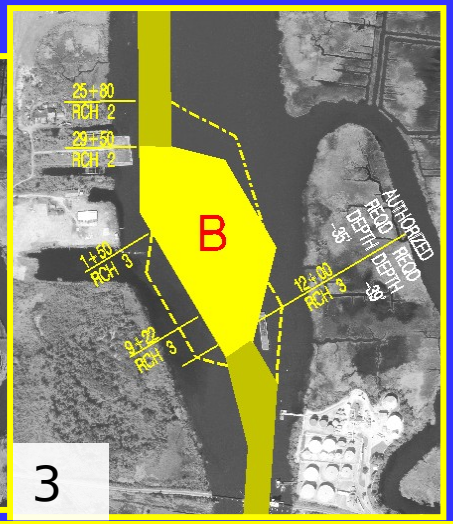
1

ALT 1 - Sediment: 604K CY | Rock: 303K CY | PNA:8.8 AC



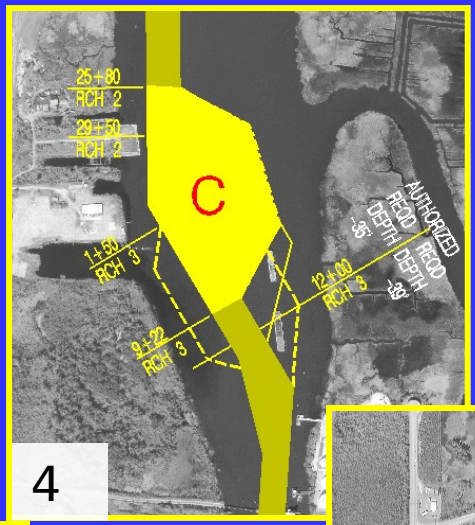
2

ALT 2 (A) - Sediment: 454K CY | Rock: 178K CY | PNA:18.6 AC



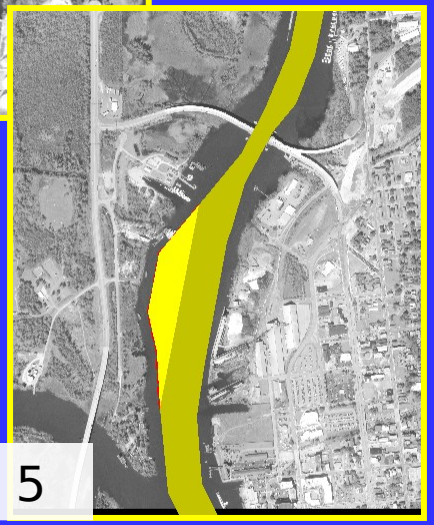
3

ALT 3 (B) - Sediment: 598K CY | Rock: 149K CY | PNA:19.0 AC



4

ALT 4 (C) - Sediment: 678K CY | Rock: 160K CY | PNA:19.6 AC



5

ALT 5 - Sediment: 97K CY | Rock: 172K CY | PNA: n/a

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General Reevaluation Report

- **Turning Basins Technical Issues:**
  - Select preferred Northeast CFR turning basin
  - Shoaling analysis
  - Middle basins preferred by pilots
  - Upper basin preferred by environmental agencies
    - Congressional approval if selected
    - Acceptable to pilots
    - Less mitigation requirements

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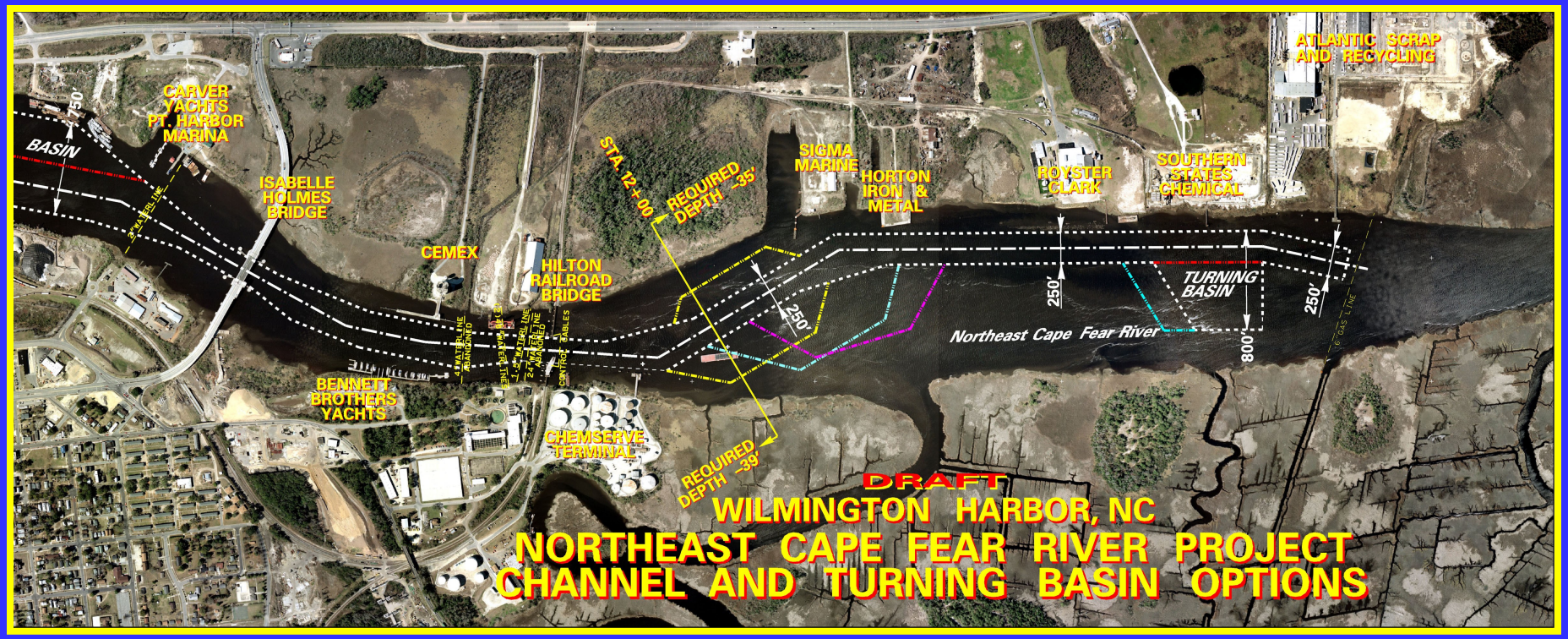
Potential Relocated Turning Basin



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General Reevaluation Report

- Milestones
  - Scoping meeting June 2005
  - Evaluate alternatives Fall 2006
  - Select alternatives January 2007
  - Alternative Formulation Briefing April 2007
  - Circulate Draft EIS Fall 2007
  - Circulate Final EIS Fall 2008
  - Record of Decision March 2009

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General Reevaluation Report (GRR)

http://www.saw.usace.army.mil/wilmington-harbor/GRR/GR

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QUESTIONS ?

Comments